

INTEGRATED CIRCUITS AND METHODS FOR THEIR FABRICATION

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ABSTRACT OF THE DISCLOSURE

5 To fabricate contacts on a wafer backside, openings (124) are formed in the face
side of the wafer (104). A dielectric layer (140) and some contact material (150), e.g.
metal, are deposited into the openings. Then the backside is etched until the contacts
(150C) are exposed and protrude out. The protruding portion of each contact has an outer
sidewall (150V). At least a portion of the sidewall is vertical or sloped outwards with
10 respect to the opening when the contact is traced down. The contact is soldered to an
another structure (410), e.g. a die or a PCB. The solder (420) reaches and at least
partially covers the sidewall portion which is vertical or sloped outwards. The strength of
the solder bond is improved as a result. The dielectric layer protrudes around each
contact. The protruding portion (140P) of the dielectric becomes gradually thinner
15 around each contact in the downward direction. The thinned dielectric is more flexible,
and is less likely detach from the contact when the contact is pulled sideways. Other
embodiments are also described.